

REMARKS

Reconsideration of the application is respectfully requested.

I. Status of the Claims

Claims 1 - 8 are presently pending.

II. Interpretation of the Office Action

Applicant thanks the Examiner for speaking with Applicant's representative on January 29, 2009 to answer Applicant's questions concerning the final Office Action of November 10, 2008. Specifically, Applicant thanks the Examiner for acknowledging that the reference at page 3, lines 15 – 17 of the Detailed Action to Applicant's arguments being unpersuasive for referring to features not recited in the claims was unwarranted was made in error, as the features referenced (“ an upper portion of the steering axis is located rearward of a lower portion of the steering axis in a traveling direction”) are in fact recited at lines 15 – 17 of claim 1.

Applicant further thanks the Examiner for pointing out her position that the term “fixedly inclined” may be read to include a steering axis that fixedly inclined “momentarily ... for a period of time.” Applicant responds to this position further herein.

III. Rejections under 35 U.S.C. § 103

Claims 1 - 8 are again rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,608,236 to Beny et al. ("Beny") in view of U.S. Patent No. 6,024,627 to Tilbor et al. ("Tilbor"). Applicant respectfully traverses this rejection.

Applicant's invention as claimed includes a pair of left and right driven wheels, and a pair of left and right steered wheels. The left and right driven wheels are each independently driven such that independent speeds can be generated in each wheel. The left and right steered wheels are supported by a steered wheel supporting mechanism that supports each wheel such that each wheel is capable of turning about a predetermined (i.e., fixed) steering axis. The steered wheel supporting mechanism also regulates turning such that that both wheels may only turn in the same direction in association with each other.

The predetermined steering axis for each wheel is inclined with respect to a vertical direction such that an upper portion of the steering axis is located rearward of a lower portion of the steering axis in a traveling direction (a so-called "positive caster angle").

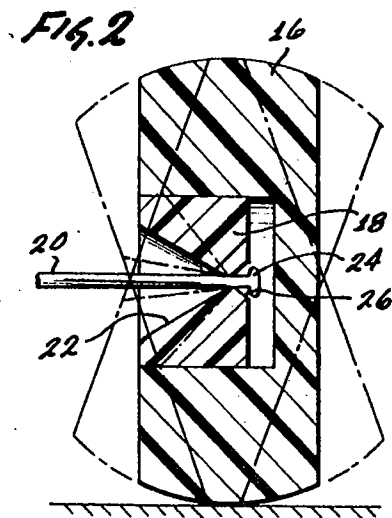
By assuming the claimed configuration, when a speed difference is generated between the left and right driven wheels that causes the model to assume a turning direction, the left and right steered wheels are naturally steered in the turning direction of the model by a reaction force received from a ground contact surface, without any additional steering driving force (see, e.g., page 9, line 9 through page 10, line 4 of Applicant's specification). Because the predetermined steering axis for each of the left and right steered wheels has a positive caster angle, a restorative force is generated that urges the wheels to return to a straight-ahead direction, thereby avoiding

an excessive turning motion of the left and right steered wheels (see, e.g., page 8, line 26 through page 9, line 2 of Applicant's specification).

Beny discloses a toy vehicle with "front wheels that tend to steer it around banked curves" (see, e.g., abstract of Beny). The Examiner acknowledges that Beny does not teach Applicant's claimed left and right driven wheels which are independently driven by different driving sources, but submits that these features are taught by Tilbor. In all other aspects, the Examiner argues that the features of Applicant's independent claim 1 are disclosed by Beny. Applicant respectfully disagrees.

With reference to FIG. 2 of Beny, Beny discloses that each of front wheels 14, 16 of the toy vehicle contains a bearing having a conical bearing aperture 22 that allows the wheel to pivot up to about 20 degrees in any direction while rotating with respect to the axle 20 (see, e.g., Col. 2: 27 - 20 of Beny). While the wheels are rotating, a tilting force (as would be applied, for example, by gravity when the toy vehicle assumes a non-horizontal position on a banked curve) tilts the wheels in a lateral direction of the vehicle. This tilting causes the front wheels to precess in a turning direction of the vehicle (see, e.g., Col. 2: 46 - 50 of Beny).

Beny's wheels 14, 16 are positioned on opposing ends of the axle 20, with no other mechanical interconnection, as shown below with reference to FIG. 2 of Beny. Thus, each of the front wheels 14, 16 is free to pivot in a direction that is independent of a pivot direction of the other wheel. In other words, because the wheels 14, 16 are mechanically interconnected by the axle 20, and each wheel is free to pivot up to 20 degrees in any direction without any further mechanical constraint, the left wheel 14 is free to turn to the left at the same time that the right wheel 16 is free to pivot to the right.



Therefore, and in sharp contrast to Applicant's invention as claimed, the wheels 14, 16 of Beny's toy vehicle cannot be said to be adapted to turn only in the same direction and in association with each other, as Beny teaches no structure which necessarily limits steering in this manner.

With further reference to FIG. 2 of Beny, it can be seen that the wheels 14, 16 are permitted to pivot within the full extent of the conical bearing aperture 22. In sharp contrast to Applicant's invention as claimed, Beny's axle 20 and bearing 22 cannot be said to restrict each of the wheels 14, 16 to pivot around a predetermined steering axis which is fixedly inclined with respect to a vertical direction such that an upper portion of the steering axis is located rearward of a lower portion of the steering axis in a traveling direction.

The Examiner suggests that a steering axis for Beny's front wheels 14, 16 can be said to be fixed "momentarily for a period of time." Applicant respectfully disagrees. Applicant claims an automobile model having a steered wheel supporting mechanism that supports the wheels to turn around a predetermined steering axis that is fixedly inclined. As Beny's wheels 13, 14 are

permitted to varyingly pivot within the full extent of the conical bearing aperture 22, this arrangement cannot be said provide a steering axis whose geometry is “predetermined” (or “set in advance”).¹ Moreover, with reference to the Examiner’s argument that the this steering axis can be “momentarily fixed,” Applicant submits that Beny teaches no structural component of the steering object which can in fact be used to “fix” or “set” the steering axis to a predetermined position, even momentarily.² Rather, the geometry of the steering axis varies continually as a function of external factors. In other words, steering geometry is determined as a function of a current external tilting force applied by gravity, and is not fixed in any predetermined manner.

Even assuming *arguendo* that the steering axes of Beny’s wheels 14, 16 can be said to be effectively fixed, Beny fails to teach or otherwise suggest that the steering axes is able to assume the geometry claimed by Applicant: a geometry in which the steering axes have an upper portion in the vertical direction that is located rearward of a lower portion of the steering axes in a traveling direction. Applicant notes that the Examiner had suggested that this argument was unpersuasive because it relies on features “not recited in rejected claims{s},” but now acknowledges that these features are in fact at lines 8 – 10 of independent claim 1

Tilbor discloses a toy vehicle having large rear wheels which are driven by different driving sources in order to produce gyroscopic effects (see, e.g., abstract of Tilbor). With reference to FIGs. 1 and 2 of Tilbor, front wheels 24 are provided on lateral sides 20, 22 of the vehicle, supported for free rotation at the outer end of a pair of ribbed reinforced bosses 26a, 26b, by a shaft 27. Applicant submits that Tilbor fails to overcome the deficiencies of Beny with

¹ See, e.g., <http://www.thefreedictionary.com/predetermined>.

² See. E.g., <http://www.thefreedictionary.com/fixed>.

respect to the above-described elements of Applicant's claimed steered wheel-supporting mechanism.

Accordingly, for at least these reasons, Applicant respectfully submits that Applicant's invention as claimed in independent claim 1 is not made obvious by the cited references, and stands in condition for allowance. As claims 2 - 8 each depend directly or indirectly from allowable claim 1, Applicant further submits that dependent claims 2 - 8 are also allowable for at least this reason.

Applicant therefore respectfully requests that the rejection of claims 1 - 8 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

In view of the above amendments and remarks, applicant believes the pending application is in condition for allowance.

If there are any issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

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Respectfully submitted,

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